Looking South from
Observation Viewpoint #1

3.0 Affected Environment, Environmental Impacts and Mitigation

This discussion was focused using the Environmental Evaluation checklist in Appendix A. The Roman numeral after the title refers to the identified issues in the checklist.

3.1 Aesthetics (I)

The project area is an Officially Designated State Scenic Highway and falls within Monterey County's Coastal Zone Boundaries.

To bring the highway up to current design standards, Caltrans must remove some small trees and shrubs. However, these removals would only be in the median area and gore area (the area between the freeway and on/off ramps).

Additionally, Monterey County has identified trees along Route 1, as a valuable visual element in its Land Use Plan and removal of trees within Coastal Zones requires a County Permit. This level of concern indicates a heightened degree of local sensitivity to the aesthetic attributes of Route 1.

To satisfy the concerns of the City of Monterey, County of Monterey, City of Seaside, City of Sand City and the citizens of all affected communities, Caltrans prepared a Visual Impact Assessment (VIA). This assessment was completed using the process developed by the Federal Highway Association (FHA). The process for assessing visual impacts satisfies the requirements of the National Environmental Policy Act of 1969 (NEPA). The intent of the following visual impact assessment is to substantiate findings presented within an environmental document by acting as a technical support document.

Landscape of the Site

The project area lies primarily adjacent to the Monterey Bay. The light rolling sand dunes against the dark blue Pacific Ocean provides high contrast. The coastal maritime vegetation of this unit is less prominent than the dense Monterey Pine Forest of Landscape Unit A. The low gray/green sprawling dune plants have adapted well to the constant coastal breeze. There are picturesque panoramic views of the Monterey Bay along this corridor. Given the relatively flat topography and dune vegetation component, commercial and retail development is much more evident. One of the region's commercial centers lies east of the highway and is very visible from the roadway.

Viewer Sensitivity and Response

The awareness of visual resources by the highway user varies with the viewer activity (e.g. commuter, tourist, and local), but generally the highway user experiences a "broadbrush" view of an area. This is especially true for the driver of the vehicle. The local highway user usually makes shorter trips to various destinations in the local area. The local highway user is generally more aware of visual resources from the highway due to their own sensitivity to the areas visual quality. The commuter would be less aware of their visual environment because of repetitive nature of their activity. Tourists generally have a very high awareness of the visual resources around them, yet are less sensitive to specific changes in that environment. Additionally, preliminary studies have indicated that the proposed improvements would be largely unnoticed from outside the immediate roadway corridor, therefore, we have concentrated our studies on the views as seen by the highway travelers.

Analyze Existing Visual Resources

A Visual Quality Evaluation, (VQE) was prepared for the proposed project. The VQE is a tool for quantitatively assessing visual quality from a specific observer viewpoint. The evaluation is prepared for both the existing condition and the proposed condition after construction is completed. With the "before" and "after" evaluation, the Visual Quality Difference can be measured.

The evaluative criterion used in a VQE includes: vividness, intactness, and unity. None of these is itself equivalent to visual quality; the average of all three must be high to indicate high quality.

> **Vividness** is the visual power (or memorableness) of the landscape components as they combine in striking and distinctive visual pattern. Vividness would focus on the features of the landscape.
>
> **Intactness** is the visual integrity of the landscape (natural and man-made) and its freedom from encroaching elements. If all the various elements of a landscape seem to "fit" together, there would be a high level of intactness.
>
> **Unity** is the visual harmony of the landscape considered as a whole. Unity represents the degree to which the visual elements maintain a coherent visual pattern.

The Visual Quality Difference (VQD) (impact) is between the existing and proposed conditions (evaluation scale 1-7; 1= very low visual quality, 7= very high visual quality). When reviewing the table at the bottom of each observer viewpoint evaluation, the justification for a high or low visual quality is reflected in the evaluative criteria (i.e., vividness, intactness, and unity). The VQE acts as the base inventory for determining the change in the visual resource or visual quality difference. A summary of the visual quality difference is analyzed at the end of the Visual Simulation Section (p. 9).

Visual Simulations

The following four key observer viewpoints were identified in this assessment (*see pp. 5-9, Observer Viewpoints #1-4).* The viewpoints are representative of a range of visual resources within the project.

It is important to understand where and why the changes in visual resources occur. For each observer viewpoint, the first image is the existing view and the accompanying view depicts the visual changes that may result from the proposed improvement. In order to best understand the extent of impact, the proposed images show each area as it may look in three years following construction.

Observer Viewpoint #1

Existing—This viewpoint represents how the project area appears to southbound highway travelers near Robert's Lake. The background of undulating hills of dense dark green pine forest against the valley combine for a moderately high vividness rating. The alignment of the roadway meanders through the landform to obtain a moderate intactness and unity rating. The low grey/green sprawling coastal dune vegetation extends from one side of the roadway to the other unifying this corridor.

Observer Viewpoint #1

Proposed—The proposed improvement represents how double thrie beam installed in the center of the median would appear to highway travelers. The construction of the double thrie beam would add another vertical man-made element to the landform. Vividness would be moderately compromised due the thrie beams foreground relationship to Robert's Lake. Intactness and unity would be equally reduced by the introduction of a vertical man-made object that divides the landform.

Viewpoint #1	Vividness	/ Intactness	/ Unity	= Visual Quality	(VQ=V+I+U/3)
Existing	5.7	5.4	5.5	=	5.5
Proposed	5.0	4.9	5.0	=	5.0
Visual Quality Difference				=	-0.5

Observer Viewpoint #2

Existing—This viewpoint represents how the project area appears to northbound highway traveler's midway between the Humboldt St. Undercrossing and Tioga Ave. Overcrossing. The large rounded sand dunes are covered in a mosaic of low growing dune plant communities. This results in a moderately high vividness and unity rating. The intactness rating is moderate due to the frontage road encroachment, power poles, and fence line in the background.

Proposed—The proposed improvement of a double thrie beam in the center of the median would negatively affect the area in all three categories. The loss of vegetation along the inside shoulders and reducing the width of the median would lower the vividness and the intactness of the area. Unity would be minimally affected.

Viewpoint #2	Vividness	/ Intactness	/ Unity	=	Visual Quality (VQ=V+I+U/3)
Existing	5.8	5.5	5.7	=	5.7
Proposed	5.4	5.1	5.6	=	5.4
Visual Quality Difference				=	-0.3

Observer Viewpoint #3

Existing—This viewpoint represents how the project area appears to southbound highway travelers near the Fremont Boulevard/Del Monte Boulevard Exit. The roadway acts as a divider of foredune and backdune plant communities. This view exemplifies the character of the northern section of the project. There are sweeping vistas, undulating landforms and varying vegetation types in this area, providing memorable experiences. The picturesque scene has a high level of intactness and unity for all users.

Proposed—All three evaluative criteria would be moderately affected by the installation of the double thrie beam barrier. The barrier would accentuate the separation of vegetation, landform, and man-made lines.

Viewpoint #3	Vividness	/ Intactness	/ Unity	=	Visual Quality (VQ=V+I+U/3)
Existing	5.8	5.6	5.7	=	5.7
Proposed	5.3	5.1	5.2	=	5.2
Visual Quality Difference				=	-0.5

Observer Viewpoint #4

Existing—This viewpoint was identified for its beautiful panoramic view of Monterey Bay. The sweeping backdrop of the Monterey Bay sets off the coastal dune community. The moderately high rating of intactness and unity complements the high level of vividness.

Proposed—The proposed thrie beam barrier would partially obstruct views to the ocean for a period of 2-3 seconds to northbound travelers. This experience would increase awareness of the barrier in this area more than in other locations. Since the thrie beam would noticeably effect views; vividness, intactness and unity would subsequently be reduced.

Viewpoint #4	Vividness	/ Intactness	/ Unity	=	Visual Quality (VQ=V+I+U/3)
Existing	6.0	5.7	5.8	=	5.8
Proposed	4.9	4.7	5.0	=	4.9
Visual Quality Difference				=	-0.9

Visual Quality Changes

The following is a summary of the potential visual changes:

	Viewpoint 1	Viewpoint 2	Viewpoint 3	Viewpoint 4	**Average**
Visual Quality Ratings— Existing	5.5	5.7	5.7	5.8	**5.68**
Visual Quality Ratings— Proposed	5.0	5.4	5.2	4.9	**5.13**

Summary of Visual Changes

The overall existing visual quality varies between a minimum of 5.5 to a maximum of 5.8. The average quality rating for the existing conditions is 5.7. This quality rating would be considered in the "high" range. The overall proposed visual quality varies between 5.0 to 5.4. The average quality rating for the proposed conditions is 5.1. With the proposed project the overall visual quality would drop but still retain a "moderately high" average visual quality rating.

Attributes of Visual Quality

Through analysis of the specific viewpoints and study of the visual experience of the corridor for the proposed project, it is found that the existing high visual quality can be attributed to the following:

- The combination of distant views to the ocean.
- Native vegetation. The space-defining quality of the Monterey Pine Forest in the narrow areas to the open mosaic of vegetation in the coastline dune communities.
- The contrast in landforms and materials.
- In areas, the minimal visual encroachment and disturbance of constructed elements.

Recommended Mitigation

In order to maintain these visual quality elements and to decrease the amount of negative visual impact causes by the project, the following design mitigation is recommended:

- Retain as many existing trees and shrubs in the median as possible by installing thrie beam safety barrier at the inside shoulders of the roadway.
- Where possible, extend existing thrie beam barrier extensions to encapsulate existing trees and shrubs.

- If necessary, prepare special project specifications to help limit disturbance around existing plant material. Example: During installation of the thrie beam require the contractor to install the posts from a drill rig on the shoulder of the roadway versus clear-cutting the entire median.

- Signs moved or replaced during construction will match existing aesthetics (wood frame around sign).

- Extend bridge guardrail along the outside shoulder of roadway to protect existing vegetation. Specifically at the following locations:

Northbound	No northbound locations
Southbound	218/01 Separation to KP 127.87 (PM 79.5)
	Casa Verde Way Undercrossing to KP 126.28 (PM 78.5)

- Replant appropriate plant material lost due to construction in the median envelope or along the outside shoulder outside the safe recovery zone at a replacement ratio of 3 to 1.

- Plant material removed from the median should be mitigated in the median.

- Plant material removed from the outside shoulders should be mitigated along the outside shoulders.

- Avoid threatened or rare plant species by designing safe alternative layouts of thrie beam.

- Where possible reduce the width of area between face of thrie beam and edge of travel way.

- Revegetate disturbed areas with indigenous plants.

Conclusion

A reduction in visual resources would occur within the project limits of Alternative 3. Installing another man-made object to the median lowers the visual quality of the space. The straight line of the wood and galvanized metal barrier would detract from the natural picturesque regional landscape. The barrier would disrupt the visual rhythm of the opening and closing of views and unique regional elements. In general, however, the relative size of the proposed improvement *would not detract from the high quality of the total visual environment.*

An important consideration is the potential cumulative effect of 5.3 kilometers (3.3 miles) of change even though visual impacts at specific locations are minor. Without mitigation, the proposed alternative would lower the visual quality for most users and viewers in the immediate project area. The greatest negative visual impacts noticed would be the installation of the double thrie beam and the loss of trees and shrubs in the median. With the implementation of the stated mitigation methods, many of the adverse visual effects of this project would be reduced.

Overall, the project would not have a substantial adverse effect on the scenic vista; would not substantially damage scenic resources and would not substantially degrade the existing visual character or quality of the site and its surroundings.

3.2 Biological Resources (IV)

To satisfy the concerns of the cities and the citizens of all affected communities, Caltrans prepared a Natural Environment Study (NES). The purpose of this study was to provide certain biological studies and information necessary for an environmental document and to satisfy legal requirements of the various State and Federal statutes. The NES includes documentation of the biological resources in the project area and an assessment of the impacts of the project alternatives on those resources. The intent of the following NES is to substantiate findings presented within an environmental document by acting as a technical support document.

The project would not significantly affect biological resources. However, in the construction process there may be a need to remove various small trees and shrubs. Caltrans mitigation for the removal of healthy trees and shrubs is at a replacement ratio of 3 to 1. Replanting would be done within similar areas (i.e., plants removed from the median would be replanted in a median envelope and plants removed from an outside shoulder area would be replanted along the outside shoulders).

Caltrans biologists surveyed the project area, after searching the California Natural Diversity Database for sensitive biological resources which occur in the project area. No sensitive biological resources, other than the sandmat manzanita (*Arctostaphylos pumila)*, were found in the Area of Potential Effect. The preferred alternative (Alternative 3), allowing for a split thrie-beam median barrier around the sensitive sandmat manzanita areas, would avoid biological impacts to this species. In fact, this type of construction may even benefit the sandmat manzanita (a Federal Species of Concern) by protecting it from errant vehicles. The Federal Endangered Species Act does not protect species of concern, only Threatened or Endangered species.

Nevertheless, the construction process of setting the posts for the thrie beam barrier would impact an area near locations of the sandmat manzanita and some of the installation equipment may trample peripheral vegetation. Of course, Caltrans would adopt measures to ensure the protection and avoidance of the species. However, during the construction process, crews may inadvertently damage one of these plants. In the event that the installation contractor impacts this Federal Species of Concern, Caltrans would require that the contractor provides mitigation planting and replace the species at a ratio of 30 to 1. The contractor would also be required to hand collect these plants (on site) and provide mitigation monitoring for a period not less than 5 years.

Recommendations

Before construction begins, a biologist would be contacted to established an Ecologically Sensitive Area (ESA) around this Federal Species of Concern. Any oaks, toyons, or Monterey cypress removed should be replaced elsewhere within the project limits at ratios and locations approved by the District Landscape Architect.

3.3 Water Quality (VIII)

Since the proposed project would disturb more than 2.0 hectares (5 acres) of previously unpaved surface, a Notice of Intent (NOI) to the State Water Resources Control Board (SWRCB) and a Storm Water Pollution Prevention Plan (SWPPP) for the Contractor would be required for this work.

A statewide permit for storm water discharge is expected to be approved by State Water Resources Control Board in or around October 1999. This permit may impose different requirements for projects involving greater than 1 or greater than 2.0 hectares (5 acres)
(e.g., specific requirements for projects greater than 1 acre and different requirements for projects greater than 5 acres). The Contractor would be responsible for contacting Frank Catherina (805-549-3386), Caltrans District 5 Storm Water Coordinator, for the latest information on this program.

4.0 Consultation and Coordination

Caltrans staff coordinated and consulted with the following agencies and organizations during the project development.

AGENCY	TYPE OF MEETING AND COMMENTS
City Council, City of Monterey	Public information meeting was held on August 18, 1998 at City Council Chambers, City of Monterey. Caltrans project design, project management, traffic safety and environmental staff were available to answer questions. City's concerns: keep visual character; type and texture of barrier; do not want barrier to look like Los Angeles (i.e., too urbanized); and ensure irrigation of new plant material.
City of Monterey, Architectural Review Committee	City of Monterey Architectural Review Committee (ARC) meeting, September 2, 1998. Committee made recommendations to City Council concerning: color and texture; median barrier material; requirement of thrie beam design; amount of paving; consider extending existing landscaped areas; new plantings should be drought tolerant; replacement of trees consistent with City policies; and metal barrier should not be shinny.
City Council, City of Monterey	Public information meeting was held on September 15, 1998 at City Council Chambers, City of Monterey. Bob McNew, Traffic Safety Branch, Caltrans spoke on project. Median Barrier item continued pending further discussions with Caltrans staff. Issues: require additional design options; use funds allocated for this project to improve other highways; and requested Caltrans to submit better visuals of proposed alternatives using computer graphics.